



INFLUENCE OF CAPITAL STRUCTURE ON PROFITABILITY OF GOVERNMENT BASED DEPOSIT TAKING SAVINGS AND CREDIT CO-OPERATIVES IN KENYA

Denis Brian Gichuru,

James N. Kung'u,

Thomas W. Gakobo

Laikipia University, Main Campus,

P.O. Box 1100-20300 Nyahururu,

Kenya

Abstract:

This study paper examines the influence of capital structure on the profitability of government based deposit taking savings and credit co-operatives in Kenya. The data used in the study was collected from the Annual Report and Financial Statements of nineteen (19) out of twenty nine (29) licensed government based Saccos covering a five (5) year period between 2013 and 2017. Thus a data set comprising of ninety five (95) observations was derived from the data collection exercise. Measure of Sacco profitability was through the use of the Return on Assets whereas capital structure was proxied through the debt to equity ratio and the debt to assets ratio. A descriptive research design was used in testing the hypotheses. Results of this study indicated that that capital structure as proxied using the Debt/ Equity Ratio and the Debt/Assets Ratio had a negative insignificant effect on profitability of Saccos measured using the ROA. The study recommended that that Deposit Taking Saccos' Board and Managements should endeavour to maintain an appropriate mix of equity and debt that maximize Sacco membership return and wealth.

JEL: G21, E51

Keywords: capital structure, return on assets, debt to equity ratio, debt to assets ratio

1. Background Information

The global network of financial co-operatives and credit unions also referred to as the World Council of Credit Unions (WOCCU) has defined savings and credit cooperative societies as credit unions with the inherent characteristics of being customer/member owned, democratically controlled by its members, are based on financial co-operation of members and are operated for the sole intention of maximizing the economic progress

of its membership by availing an array of financial services at competitive and fair rates. Credit Unions are also aimed at providing financial inclusion and financial stability to their members (WOCCU, 2018). In Kenya, Savings and Credit Co-operatives (Saccos) are the equivalent of Credit Unions in jurisdictions such as United States of America, Canada, United Kingdom, Australia and the Latin Americas or the Cooperative Banks in South Africa, India and parts of continental Europe.

Statistics indicate that the global credit union movement provides financial services to a total of 260 million people globally and total savings and shares held amount to USD 1.7 trillion while the total loan portfolio issued to members worldwide totals to USD 1.5 trillion. Moreover, the total asset base as at the time of the report aggregated to USD 2.1 Trillion while total reserves held amounted to USD 195 billion. The global penetration rate which is calculated by dividing the total number of reported credit union members by the economically active population aged between 15-64 years stood at 9.09 per cent (WOCCU, 2017). The Sacco movement in Africa has a total of 37,607 Saccos with individual total membership totaling to 29,610,773. The saving and shares held by these members as per the released data total to USD 7.9 billion. The total amount of loans disbursed stands at USD 9.04 billion while USD 821 million is held as reserves. The total Sacco asset base in the region stands at USD 9.16 trillion while the Sacco penetration rate is at 9.25 % (WOCCU, 2017).

The total membership of Kenya's Deposit Taking Sacco (DTS) movement (DTS) stands at 3,599,200 individual members and this membership controls assets worth USD 4.42 billion while total deposits held by all DTS stands at USD 3.05 billion. The total amount of loans advanced to members aggregates to USD 3.31 billion while the capital reserves stand at USD 0.72 billion (SASRA, 2017). Sacco societies are member based organizations that are intended to meet the financial needs of members for personal and enterprise development and they represent an important and considerable part of the Kenyan financial sector. Membership in deposit taking Saccos cuts across different economic activities both in rural and urban areas. Saccos are engaged in either in Back Office Savings Activities (BOSAs) or the Front Office Savings Activities (FOSAs) or both. The Sacco Societies operating FOSA reflect near retail banking business operations (Joint Annual Report by Financial Sector Regulators, 2011).

In Kenya, the Sacco sub sector is categorized into two tiers depending on the range of financial services the Sacco offers to its members and the supervisory and regulatory regime under which they fall into. The first category is the Non Deposit Taking Saccos which can be described in as the traditional Savings and Credit Co-operative Societies (Saccos). These Saccos provide a limited range of savings and credit products. They are registered by the Commissioner for Cooperative Development (CCD) and are governed by the Cooperative Societies Act Chapter 490 of the Laws of Kenya to mobilize savings and take deposits from their members and also provide credit facilities against the collateral of such savings or deposits. These deposits cannot be withdrawn by the member but can only be refunded back minus any debts and liabilities owed by the member upon the member's resignation from the membership of

the SACCO. As such, they are not authorized to take withdrawable deposits or present themselves to the public as deposit-taking entities.

The other category is the deposit taking Saccos (DTS) which apart from providing the basic savings and credit products also provide other 'banking' services such as taking of demand deposits, payment services and providing other quasi banking channels such as automated teller machines and FOSA. They are licensed and supervised under the Sacco Societies Act of 2008 which provides that the regulatory authority of these Saccos shall be the Sacco Societies Regulatory Authority (SASRA). The general trend is that Saccos start as non-deposit taking Sacco business to expand the range of financial services to members till they meet the standards to be licensed at deposit taking Saccos (SASRA, 2013).

Government based DTS draw their membership from employees of Ministries, Departments, State Corporations, State Agencies, Public Universities and Colleges and County Governments. As at 31st December 2017, there were 29 licensed public sector DTS out of the total of 176 licensed by SASRA. These DTS had a total membership of 484,882 out of the total membership of 3,599,200 representing 13.47 % of the total DTS membership (SASRA, 2017).

Kenya's Sacco Societies Regulatory Authority through the Sacco Societies (Deposit Taking Sacco Business) Regulations 2010 has stipulated the minimum capital structure and capital adequacy amongst other operational regulations and prudential standards required of a deposit taking Sacco Society. Section 9 of the cited regulations provides that a Sacco Society shall at all times maintain core capital of not less than ten million Kenyan shillings; core capital of not less than ten per cent of total assets; institutional capital of not less than eight per cent of total assets and core capital of not less than eight per cent of total deposits. In this study, the capital structure is proxied by the Debt to Equity ratio and the Debt to Assets ratio.

1.1 Statement of the Problem

Since the gazettelement of the Sacco Societies Regulatory Authority (SASRA) Regulations in 2011, the licensed Deposit Taking Saccos (DTS) have reported an average ROA of 2.382 per cent over the 2013 -2017 period whereas the average profitability as measured using the return to assets ratio of other deposit-taking institutions such as commercial banks, mortgage finance companies and microfinance banks has averaged just about 4 per cent over the same period (CBK 2013-2017). In 2017, a total of 28 DTS were unable to comply with prescribed core capital to total assets ratio of 10%, another 11 DTS did not fully maintain the prescribed ratio of core capital to total deposits ratio of 8% while 106 DTS failed to comply with the key regulatory requirement of having institutional capital to total assets ratio of 8% (SASRA, 2017). It is on this basis that the researcher investigated the influence of capital structure on the profitability of government-based Deposit Taking Savings and Credit Co-operative Societies in Kenya.

1.2 Theoretical Framework

This research paper is premised on the capital structure theory as advanced by the Modigliani and Miller. The Modigliani and Miller (1958) capital structure irrelevance proposition formed the modern basis to the theory of business finance. Before the pair's seminal treatise, there was no generally accepted theory of capital structure. Modigliani and Miller initiated the discussion on capital structure by assuming that the firm has a particular set of expected cash flows. They postulated that when the firm elects a certain proportion of debt and equity to finance its assets, all that it does is to allocate the cash flows among investors. Investors and firms are assumed to have equal access to financial markets, which allows for homemade leverage. The investor can create any leverage that was wanted but not offered, or the investor can get rid of any leverage that the firm took on but was not wanted. As a result, the leverage of the firm has no effect on the market value of the firm (Luigi & Sorin, 2009). Three critical propositions that are the basis of the MM theorem emerge from Modigliani and Miller's (1958, 1961 & 1963) Publications (Breuer and Gürtler, 2008). These are: Proposition I – A firm's total market value is independent of its capital structure. Proposition II – The cost of equity increases with its debt-equity ratio. Proposition III – A firm's total market value is independent of its dividend policy.

2. Literature Review

The theory of business finance in a contemporary sense starts with the Modigliani and Miller (1958) capital structure irrelevance proposition. Before them, there was no generally accepted theory of capital structure. Modigliani and Miller start by assuming that the firm has a particular set of expected cash flows. When the firm chooses a certain proportion of debt and equity to finance its assets, all that it does is to divide up the cash flows among investors. Investors and firms are assumed to have equal access to financial markets, which allows for homemade leverage. The investor can create any leverage that was wanted but not offered, or the investor can get rid of any leverage that the firm took on but was not wanted. As a result, the leverage of the firm has no effect on the market value of the firm (Luigi & Sorin, 2009).

According to Modigliani and Miller's Publications (1958, 1961 & 1963), three important propositions, which form the base of their theorem, can be drawn (Breuer and Gürtler, 2008). These are: Proposition I – A firm's total market value is independent of its capital structure. Proposition II – The cost of equity increases with its debt-equity ratio. Proposition III – A firm's total market value is independent of its dividend policy. Modigliani and Miller's (1958) proposition of "capital structure irrelevance" argues that the firm's market value is not affected by the financial leverage assuming that there exists perfect capital markets, homogeneous expectations and no taxation. Arbitrage, they argued would ensure that an individual's exposure to risk would not change because homemade leverage was as good as corporate leverage. Durand (1959) however, reacted to Modigliani and Miller's irrelevant theory. He questioned the

applicability of arbitrage prices and the assumptions they made of a risk-less world that are somehow unrealistic. In response to this and other criticisms, Modigliani and Miller (1963) modified their original hypothesis. Relaxing the assumption of zero taxation, they argued that levered institutions were more valuable than unlevered institutions due to the fact that debt is a tax deductible expense.

Gifford (1998) asserts that by witnessing the results of the Modigliani-Miller Theorem, we cannot conclude that they finally prove that the capital structure or financial decisions are entirely irrelevant to the firm's value. This was neither the aim of the study of these two authors Modigliani and Miller, in order to verify this, it suffices to observe their assumptions presented in their paper such as: there are no taxes, markets are perfect, there are no transaction costs or bankruptcy cost etc. All these assumptions show that the world imagined by Modigliani and Miller is a controlled environment which cannot be witnessed anywhere in the world or as stressed by many authors, it seems that the real world is a bit different from the world that Modigliani-Miller propositions were established.

Modigliani-Miller assumptions were created based on non-real market conditions, but they offer the opportunity for further improvement and new theories regarding two issues stressed by those propositions. Nevertheless, beyond this, the Modigliani-Miller Theorem is a way of thinking in terms of the finances and capital structure in particular, a way that requires a high level of intellectual discipline and analytical clarity. When studying the capital structure and ways of the firm's financing with the persuasion that "everything is irrelevant", it is possible to identify the factors that in the real world are important and relevant (Prenaj & Ahmeti, 2015).

But the fact that fairly reliable empirical relations between a number of factors and corporate leverage exist, while not disproving the theory, does make it seem an unlikely characterization of how real businesses are financed. A popular defense has been to argue as follows: *"While the Modigliani-Miller theorem does not provide a realistic description of how firms finance their operations, it provides a means of finding reasons why financing may matter."* This description provides a reasonable interpretation of much of the theory of corporate finance. Accordingly, it influenced the early development of both the trade-off theory and the pecking order theory (Frank & Goyal, 2005).

Abor (2005) investigated the relationship between capital structure and profitability of public companies. The study utilised data collected between 1998 and 2002 for twenty-five firms listed at the Ghanaian Stock Exchange based in Accra. Using regression analysis the researcher attempted to regress the return on equity (ROE) against a measure of capital structure and he found that there exists a significantly positive relation between the ratio of short-term debt to total assets and ROE and negative relationship between the ratio of long-term debt to total assets and ROE.

Sarkar and Zapatero (2003) found a positive relationship between leverage and profitability. Myers and Majluf (1984) find that firms that are profitable and generate high earnings are expected to use less debt capital comparing with equity than those that do not generate high earnings.

Sheel (1994) showed that all leverage determinant factors studied, excepting firm size, are significant to explain debt behaviour variations. Gleason et al. (2000) using data from retailers in 14 European countries, which were grouped into 4 cultural clusters, showed that capital structures for retailers vary by cultural clusters. This result held in the presence of control variables. Using both financial and operational measures of performance, it was shown that capital structure influenced financial performance although not exclusively. A negative relationship between capital structure and performance suggests that agency issues may lead to use of higher than appropriate levels of debt in the capital structure, thereby producing lower performance. Graham (2003) integrated under firm specific benefit functions to estimate the capitalized tax benefit of debt which equaled 9.7% of firm value. It was thus concluded that a typical firm could double tax benefits by issuing debt until the marginal tax benefits begin to decline.

Kaumbuthu (2011) carried out a study to determine the relationship between capital structure and return on equity for industrial and allied sectors in the Nairobi Securities Exchange during the period 2004 to 2008. Capital structure was proxied by debt equity ratio while performance focused on return on equity. The study applied regression analysis and found a negative relationship between debt equity ratio and ROE. The study focused on only one sector of the companies listed in Nairobi Securities Exchange and paid attention to only one aspect of financing decisions. The results of the study, therefore, may not be generalized to the other sectors.

Ogbulu and Emeni (2012) sought to provide evidence on the impact of capital structure on a firm's value. The analysis was implemented on a sample of 124 companies quoted on the Nigerian Stock Exchange (NSE) for the year ended 31st December 2007. The ordinary least squares method of regression was employed in carrying out this analysis. The result of the study revealed that in an emerging economy like Nigeria, equity capital as a component of capital structure is irrelevant to the value of a firm, while Long-term-debt was found to be the major determinant of a firm's value. Following from the findings of this study, corporate financial decision makers are advised to employ more of long-term-debt than equity capital in financing their operations since it results in a positive firm value.

Muya (2013) studied the relationship between capital structure and financial performance of listed cement manufacturing companies in Kenya. Multivariate regression analysis for the 3 listed cement manufacturing companies over the period 2006 to 2011 was used to investigate the extent to which explanatory variables captured in the model contribute to the explained variance in the dependent variable. The model took Net Profit, Return on Capital Employed and Return on Equity as proxies of financial performance. Explanatory variables included Debt/Equity ratio and fixed charge to total capital ratio. The study showed that there was a relationship between debt to total funds and net profit margin.

Koech (2013) investigated the effect of capital structure on financial performance of financial firms listed at Nairobi Stock Exchange. The study population comprised of

financial firms listed on the Nairobi Stock Exchange for the period between January 2008 and December 2012, a period of 5 years and this study concentrated on the banking sector which had eleven companies listed during the period under review. The study revealed that capital structure is inversely related to performance as revealed by the regression results of debt and return on equity.

Maina and Kondongo (2013) investigated the effect of debt-equity ratio performance of firms listed at the Nairobi Securities exchange. A census of all firms listed at the Nairobi Security Exchange from year 2002-2011 was the sample. The study found a significant negative relationship between capital structure (DE) and all measures of performance. These results collaborated MM theory that indeed capital structure is relevant in determining the performance of a firm. The study further found that that firms listed at NSE used more short-term debts than long term.

Gichangi (2014) sought to explain the relationship between capital structure and profitability of forty (40) listed non- financial firms in Kenya over the 5 year period from 2008 to 2012 after the financial crisis of 2007. The study adopted a descriptive research design using regression techniques to analyse secondary data extracted from annual financial reports. The study revealed that the long-term liability to equity is inversely related to profitability. The study also found that the firm's profitability (measured by return on equity) was positively correlated with the short-term debt and long term debt. The study therefore concluded that there is a negative relationship between capital structure and profitability.

Opala (2014) while studying the effect of financial stability on the performance of DTSs in Nairobi County for the period 2010 – 2013 found out that factors such as capital adequacy, liquidity, size of the Sacco and management quality positively influence the financial performance of deposit taking Saccos.

Andersson and Minnema (2018) while investigating the relationship between leverage and profitability of consulting firms in Sweden did a statistical analysis that showed that leverage has a significant negative relationship with profitability. This is in line with the pecking-order theory, implying that firms mainly use internal financing over external financing to achieve higher profitability

3. Materials and Methods

This study adopted a descriptive research design. The target population of this study was the twenty-nine (29) licensed government-based deposit taking Saccos in Kenya. This study focused on the entire population of government based deposit taking Saccos hence a census of all the twenty nine (29) licensed government based DTS was conducted. Census population studies are the most representative because every element is included in the study (Mugenda & Mugenda, 2008). The relevant data was collected with the aid of a specially designed record survey sheet and data abstraction tool to fit the information required. The financial data so collected provided the financial ratios on measurement of Sacco capital structure and profitability. Secondary

data was collected directly from the Saccos to cover a period of five years from 2013 to 2017 which is considered long enough to offer meaningful insight concerning any relationship between the variables. All the data for all the variables was collected by review of the annual reports and audited financial statements of the Saccos under review covering the period 2013 to 2017. The specific financial statements from which data was extracted included the income statement, the statement of financial position and notes to the accounts. The study also employed data gathered from the SASRA Sacco Supervision Annual Reports. Descriptive statistic involved the use of frequency, percentages and mean while inferential statistics entailed the use of multiple linear regressions to establish the relationship between the independent and dependent variables. The regression equation took the following form:

$$ROA = \alpha + \beta_1 DER_t + \beta_2 DAR_t + \beta_3 CCTAR_t + \beta_4 CCTDR_t + \beta_5 ICTAR_t + \varepsilon_t$$

Where:

Y = measure of profitability using return on assets (ROA)

α = Constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = Coefficients of the regressor variables

DER_t = debt /equity ratio at time t

DAR_t = debt to total assets ratio at time t

$CCTAR_t$ = core capital to total assets ratio at time t

$CCTDR_t$ = core capital to total deposits ratio at time t

$ICTAR_t$ = institutional capital to total assets ratio at time t

ε_t = error term

4. Results and Discussion

4.1 Descriptive Statistics

Annual Reports and Financial Statements were obtained from nineteen (19) licensed government based deposit taking SACCOS for the period 2013 – 2017 out of a total of twenty nine (29). The Annual Reports and Financial Statements for the study were directly obtained from the principle place of business and registered head offices of the Saccos. The relevant data was extracted and collated from the reports and financial statements. Table 1 shows the descriptive summary statistics obtained from the study.

Table 1: Descriptive statistics

	N	Mean	Std Deviation	Minimum	Maximum
ROA	92	0.0221	0.0157	-0.055	0.0659
DER	92	0.2021	0.4395	0	2.12
DAR	92	0.0333	0.0762	0	0.479
CCTAR	92	0.1288	0.0725	0.0362	0.69
CCTDR	92	0.1687	0.0705	0.0438	0.41
ICTAR	92	0.0715	0.052	-0.01	0.412

The results on Table 1 indicate that the mean value of return on assets (ROA) for 95 observations was 0.0221 with a standard deviation of 0.0157 and minimum value of -0.055 and a maximum of 0.0659. The positive mean value of the return on assets is an indicator that DTSs were on average profitable over the study period although a small number of DTS operated at a loss as reflected by the negative minimum observed value of ROA of -0.055. The standard deviation of 0.0157 implies that the return on assets among the government-based deposit taking savings and credit co-operative societies in Kenya experienced low variability within the period of study while the return on assets was less volatile.

From the results outcome reflected in Table 1, the mean value of the debt to equity ratio (DER) was 0.2021. This indicates that, on average, government based deposit taking Saccos were lowly geared. This means that a greater proportion of government based DTS funded their operations from internal sources of revenue rather than from borrowings. The standard deviation of 0.4395 points towards a minimal variation in financial leverage since the minimum observed debt to equity ratio was 0 while the maximum stood at 2.12

Results tabulated in Table 1 additionally indicate that the debt to asset ratio (DAR) had a mean of 0.0333 while the standard deviation was 0.0762. This implied that there was low variability of the debt to assets ratio over the study period. This is confirmed by the finding that the minimum value of the statistic was 0 while the maximum value was 0.479. Therefore, the government based DTSs maintained a relatively constant debt to asset ratio.

4.2 Correlation Analysis

The study sought to examine the correlation between debt to equity ratio, the debt to asset ratio, core capital to total assets ratio, core capital to total deposits ratio, institutional capital to total assets ratio and the return on assets of government based deposit taking Saccos in Kenya. The table below summarizes the correlation between these variables.

Table 2: Correlation Matrix

	ROA	DER	DAR	CCTAR	CCTDR	ICTAR
ROA	1.0000					
DER	-0.1022	1.0000				
DAR	-0.4910	0.2998	1.0000			
CCTAR	0.2257	-0.0265	-0.0431	1.0000		
CCTDR	0.3041	0.0787	0.0604	0.4439	1.0000	
ICTAR	-0.0277	0.0994	0.0141	0.0141	0.3624	1.0000

The results on Table 2 show that the debt to equity ratio had a negative weak correlation with return on assets as shown by the correlation co-efficient of -0.1022. The results also show that the debt to assets ratio had a weak negative correlation with return on assets as shown by the correlation coefficient of - 0.4910. These results

indicate that there exists weak negative correlation between the independent variables and the dependent variable.

4.3 Regression Analysis

4.3.1 Model Summary

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	0.803 ^a	0.644	0.507	0.01504

a. Predictors: (Constant), Profitability, DER, DAR, CCTAR, CCTDR, ICTAR

According to the study findings on Table 3, the value of R – square is 0.644 which indicates that 64.4% of the variation in the dependent variable (return on assets) is explained by the study variables while 35.6% is explained by other factors which have not been considered by the model. In addition, the R value of 0.803 indicates that there is a positive relationship between capital structure and profitability of government based deposit taking Saccos in Kenya.

4.3.2 Regression Co-efficients

Table 4: Regression Co-efficients

Dependent Variable: Return on Assets			
Independent Variables	Standardized Coefficients	t-statistic	Sig.
Constant	-.005	-.610	.552
Debt /Equity Ratio	-.004	-.918	.037
Debt/Asset Ratio	-.085	-2.123	.005
Core Capital/Total Assets Ratio	-.055	-.959	.035
Core Capital/ Total Assets Ratio	.204	3.214	.017
Institutional Capital/ Total Assets Ratio	.009	.472	.024
R-value: 0.803, R square: 0.644, Adjusted R-squared: 0.507 , Durbin-Watson statistic: 1.613, F-Statistic: 4.704, Probability (F-statistic): 0.011 Standard error: 0.01504			

Using the regression coefficients in Table 4, this paper predicted the return on assets using the regression equation as:

$$ROA = - 0.005 - 0.004DER - 0.085DAR - 0.055 CCTAR + 0.204 CCTDR + 0.009 ICTAR$$

The results in Table 4 indicate that the value of R was 0.803 while the adjusted R square was 0.507 which implied that the variations in the independent variables jointly explain 50.7 per cent of the variations return on assets of government-based deposit taking savings and credit co-operative societies in Kenya. The rest 49.3 per cent of the variations in return on assets of government-based deposit taking savings and credit co-operative societies in Kenya could be attributed to variables that are not captured in the model.

The F-value was 4.704 with a p-value of 0.011 which was less than 0.05 implying that the overall model was significant in predicting the profitability of government-based deposit taking savings and credit co-operative societies in Kenya. Hence the study rejects the null hypothesis that when all independent variables are taken together, they do not have a combined effect on the profitability. The study further confirms that indeed there is a significant influence of capital structure on the profitability of government-based deposit taking savings and credit co-operative societies in Kenya.

It is also evident that the debt to equity ratio and the debt to assets ratio were significant predictors of the returns on assets since their p- values were less than 0.05. Furthermore, it is evident from Table 4 that both debt to equity ratio and the debt to assets ratio rate on a small scale negatively influenced the return on assets with the returns declining at an average of about 0.04 percent and 8.5 percent for each one percentage increase in debt to equity ratio and the debt to asset ratio respectively.

5. Conclusion and Recommendations

The first objective of the study was to examine the influence of Debt/Equity Ratio on the Profitability of Government Based Deposit Taking Saccos in Kenya. The study found out that there was a statistically significant negative relationship between use of leverage as measured using the debt to equity ratio and profitability of government based deposit taking Saccos as measured by using the Return on Assets. From the regression equation, it is clearly evident that as a Sacco increases its long term debt, its profitability marginally declines.

The second objective was to assess the influence of Debt/Assets Ratio on the Profitability of Government Based Deposit Taking Saccos in Kenya. From the study results, it was concluded that the Debt/Assets Ratio has a statistically significant negative influence on the profitability of government based deposit taking Saccos in Kenya. This means that as Saccos increase their debt to assets ratio, their profitability reduces but very marginally.

The results of this research paper have profound policy implications in the individual DTS firm, Sacco Sub Sector and the entire financial landscape. Based on the findings highlighted in this paper, specifically the results of hypothesis i and the first conclusion, the Debt/ Equity ratio can explain profitability of DTS Saccos. This study recommends that Deposit Taking Saccos' Board and Managements should endeavour to maintain an appropriate mix of equity and debt that maximize Sacco membership return and wealth.

Secondly, the findings of hypothesis ii and the conclusion made thereof that increasing financial leverage as measured using the Debt/Assets ratio had negative effect on the profitability of government based deposit taking Saccos in Kenya, this study recommends that Saccos should strive to attain a compromise between different funding sources such as equity, debt and hybrid securities that result into the highest return.

References

- Abor, J. (2005). The effect of capital structure on profitability: An empirical analysis of listed firms in Ghana. *The Journal of Risk Finance*, 6(5), 438-445.
- Andersson, A. & Minnema, J. (2018). The relationship between leverage and profitability: A quantitative study of consulting firms in Sweden. A degree project presented in the Umea University. Retrieved from www.usbe.umu.se, 26th August 2019 at 3.46 P.M.
- Breuer, W., & Gürtler, M. (2008). 50 years after MM: Recent developments in corporate finance. *Journal of Business Economics (Special Issue 6/2008 edition)*.
- CBK. (2013). *Financial Sector Stability Report*. Nairobi, Kenya: CBK.
- CBK. (2014). *Financial Sector Stability Report*. Nairobi, Kenya: CBK.
- CBK. (2015). *Financial Sector Stability Report*. Nairobi, Kenya: CBK.
- CBK. (2016). *Financial Sector Stability Report*. Nairobi, Kenya: CBK.
- CBK. (2017). *Financial Sector Stability Report*. Nairobi, Kenya: CBK.
- Durand, D. (1959). "The cost of capital, corporate finance, and the theory of investment: Comment" *The American Economic Review*, 4, 1959, 639-655.
- Frank, M. Z. & Goyal, V.K. (2005). Trade -off and pecking order theories of debt. *Handbook of Corporate Finance*, 7, 2-62
- Gichangi, N.K. (2014). *The relationship between capital structure and profitability of listed non-financial firms in Kenya*. An MBA Dissertation presented in the University of Nairobi. Retrieved from <http://erepository.uonbi.ac.ke>, 21st January 2015 at 9.22 A.M
- Gifford, D. (1998). *After the revolution- forty years ago, the Modigliani-Miller propositions started a new era in corporate finance. How does MM hold up today?* Retrieved in June 2016 from NYU-STERN (<http://www.stern.nyu.edu>).
- Gleason, K. C., Mathur L. K. & Mathur, I. (2000). "The interrelationship between capital structure and performance: Evidence from European retailers". *Journal of Business Research*, 50 (2), 185– 191.
- Graham, J. (2000). "How big is the tax advantage to debt?" *Journal of Finance*, 55 (5), 1901– 1941.
- Joint Annual Report by Financial Sector Regulators. *Kenya's Financial Sector Stability Report*, (2011). 3: 39-41.
- Kaumbuthu, A. J. (2011). *The relationship between capital structure and financial performance: A study of firms listed under industrial and allied sector at The Nairobi Stock Exchange*. An MBA Dissertation presented at the University of Nairobi. Retrieved from <http://erepository.uonbi.ac.ke>, 20th April 2015 at 8.57 P.M.
- Koech, S. K. (2013). *Effect of capital structure on profitability of financial firms listed at The Nairobi Stock Exchange*. An MBA Project presented at Kenyatta University. Retrieved from <http://ir-library.ku.ac.ke>, 20th January 2015 at 4.38 P.M
- Luigi, P. & Sorin, V. (2009). A review of the capital structure theories. *Annals of Faculty of Economics*. 3(1), 315-320

- Maina, L. & Kondongo, O. (2013). *Capital structure and financial performance in Kenya: Evidence from firms listed at the Nairobi Securities Exchange*. Paper presented at the Jomo Kenyatta University of Science and Technology, SHRD Research Conference, Kenya, pp 238-246.
- Modigliani, F. & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, 48(3), 261-297.
- Miller, M. H. & Modigliani, F. (1961). Dividend policy, growth and the valuation of shares. *Journal of Business*, 34, 411-433
- Modigliani, F. & Miller, M. H. (1963). Corporate income taxes and the cost of capital: A correction. *American Economic Review*, 53, 433-443.
- Mugenda, O. M, & Mugenda, A. G. (2008). *Research Methods: Quantitative & Qualitative Approaches*. Nairobi, Kenya: Acts Press.
- Muya, J. E. (2013). *Effect of capital structure on the financial performance of listed cement manufacturing companies in Kenya*. An MBA Project submitted to Kenyatta University. Retrieved from <http://ir-library.ku.ac.ke>, 20th January 2015 at 4.06 P.M
- Ogbulu, O. M., & Emeni, F.K. (2012). Capital structure and firm value: empirical evidence from Nigeria. *International Journal of Business and Social Science*, 3(19), 252 -261
- Opala, J. A. (2014). *Effect of financial stability on the performance of deposit taking Saccos in Nairobi County*. An MBA Project submitted to the University of Nairobi. Retrieved from www.erepository.uonbi.ac.ke, 9th February 2015 at 3.54 P.M
- Prenaj, B. & Ahmeti, F. (2015). A critical review of Modigliani and Miller theorem of capital structure. *International Journal of Economics, Commerce and Management*. 3(6), 914- 924.
- Sarkar, S. & Zapatero, F. (2003). The trade-off model with mean reverting earnings: Theory and empirical tests. *The Economic Journal*, 113 (490), 834 – 860.
- SASRA. (2013). *Sacco Supervision Annual Report- Deposit Taking Business*. Nairobi, Kenya: SASRA.
- SASRA. (2014). *Sacco Supervision Annual Report- Deposit Taking Business*. Nairobi, Kenya: SASRA.
- SASRA. (2015). *Sacco Supervision Annual Report- Deposit Taking Business*. Nairobi, Kenya: SASRA.
- SASRA. (2016). *Sacco Supervision Annual Report- Deposit Taking Business*. Nairobi, Kenya: SASRA.
- SASRA. (2017). *Sacco Supervision Annual Report- Deposit Taking Business*. Nairobi: Kenya: SASRA.
- WOCCU. (2017). *2017 Statistical Report*. Washington D.C, U.S.A: WOCCU.
- WOCCU. (2018). *2018 Annual Report*. Washington D.C, U.S.A: WOCCU.

Creative Commons licensing terms

Authors will retain copyright to their published articles agreeing that a Creative Commons Attribution 4.0 International License (CC BY 4.0) terms will be applied to their work. Under the terms of this license, no permission is required from the author(s) or publisher for members of the community to copy, distribute, transmit or adapt the article content, providing a proper, prominent and unambiguous attribution to the authors in a manner that makes clear that the materials are being reused under permission of a Creative Commons License. Views, opinions and conclusions expressed in this research article are views, opinions and conclusions of the author(s). Open Access Publishing Group and European Journal of Economic and Financial Research shall not be responsible or answerable for any loss, damage or liability caused in relation to/arising out of conflict of interests, copyright violations and inappropriate or inaccurate use of any kind content related or integrated on the research work. All the published works are meeting the Open Access Publishing requirements and can be freely accessed, shared, modified, distributed and used in educational, commercial and non-commercial purposes under a [Creative Commons Attribution 4.0 International License \(CC BY 4.0\)](#).